

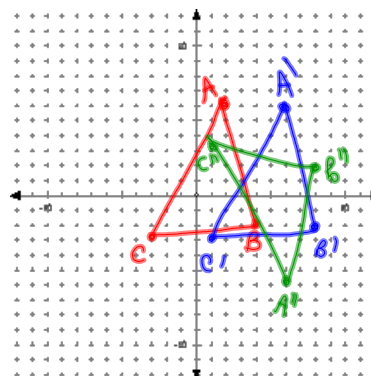
## 9.5 Apply Compositions of Transformations

Glide reflection--transformation that is a translation followed by a reflection

When two or more transformations are combined, then the result is a composition of transformations.

$A(2, 6)$   $B(4, -2)$   $C(-3, -3)$   
Find the image of the triangle after the translation  $(x, y) \rightarrow (x+4, y)$  and then the reflection in the x-axis.

$$\begin{aligned} A' &(6, 6) \\ B' &(8, -2) \\ C' &(1, -3) \\ A'' &(6, -6) \\ B'' &(8, 2) \\ C'' &(1, 3) \end{aligned}$$



Reflections in parallel lines--same as a translation

geogebra

Reflections in intersecting lines--same as a rotation about the intersection where the angle of rotation is 2 times the acute or right angle of intersection

## 9.7 Identify and Perform Dilations

Dilate the triangle by a ratio of  $\frac{1}{2}$ , centered at the origin.

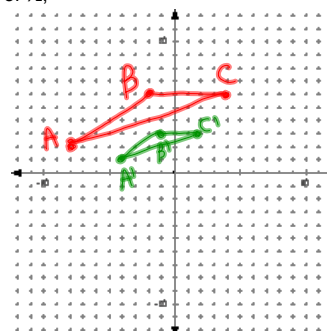
$$A(-8, 2) A'(-4, 1)$$

$$B(-2, 6) B'(-1, 3)$$

$$C(4, 6) C'(2, 3)$$

Graph the preimage and the image.

Reduction  
SF  $\frac{1}{2}$



Dilate the triangle by a ratio of -3, centered at the origin.

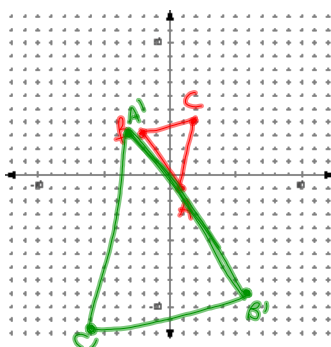
$$A(1, -1) A'(-3, 3)$$

$$B(-2, 3) B'(-6, -9)$$

$$C(2, 4) C'(-6, -12)$$

Graph the preimage and the image.

Enlargement  
SF 3:1



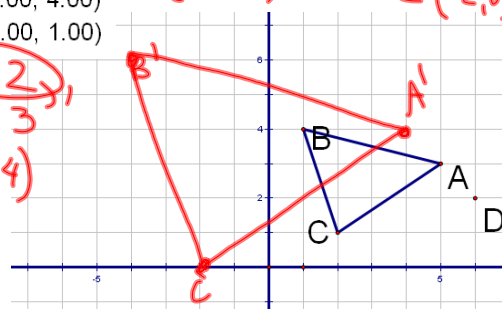
Dilate  $\triangle ABC$  with a scale factor of 2 centered at  $D(6, 2)$

$$A: (5.00, 3.00)$$

$$B: (1.00, 4.00)$$

$$C: (2.00, 1.00)$$

$$\begin{aligned} A' &(6, 2) \\ B' &(4, 4) \\ C' &(4, 4) \end{aligned}$$

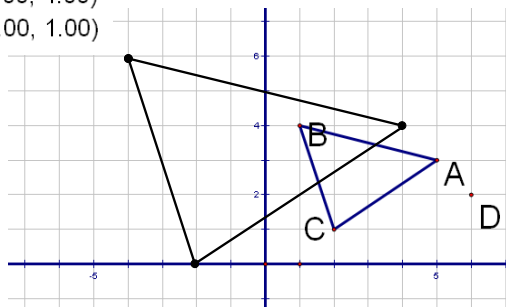


Dilate  $\triangle ABC$  with a scale factor of 2  
centered at  $D(6,2)$

A: (5.00, 3.00)

B: (1.00, 4.00)

C: (2.00, 1.00)



Dilate  $\triangle ABC$  with a scale factor of .5  
centered at  $D(4,5)$

A(2,1)

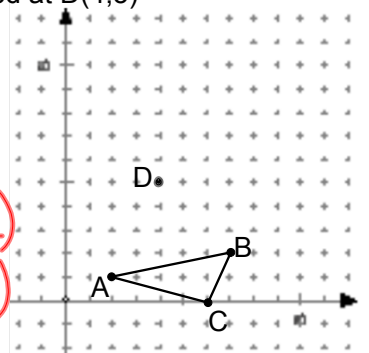
B(7,2)

C(6,0)

$A'(3,3)$

$B'(5\frac{1}{2}, 3\frac{1}{2})$

$C'(5, 2\frac{1}{2})$

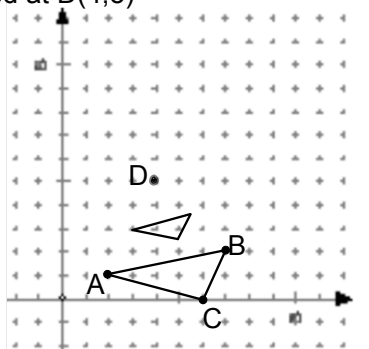


Dilate  $\triangle ABC$  with a scale factor of .5  
centered at  $D(4,5)$

A(2,1)

B(7,2)

C(6,0)



HW

p612 #s 10, 13-21

p630 #s 21, 32

Attachments

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9\_5reflections\_ex.gsp